

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 99-NM-67-AD; Amendment 39-13334; AD 2003-20-16]

RIN 2120-AA64

Airworthiness Directives; Boeing Model 747SP, 747SR, 747-100, 747-200, and 747-300 Series Airplanes; Equipped With Pratt & Whitney Model JT9D-3, -7, and -7Q Series Engines and Model JT9D-7R4G2 Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD), applicable to certain Boeing Model 747SP, 747SR, 747-100, 747-200, and 747-300 series airplanes, that currently requires repetitive operational tests of the reversible gearbox pneumatic drive unit (PDU) or the reversing air motor PDU to ensure that the unit can restrain the thrust reverser sleeve, and correction of any discrepancy found. This amendment requires installation of a terminating modification, repetitive functional tests of that installation to detect discrepancies, and repair if necessary. This amendment also removes airplanes from the applicability and adds certain new requirements. The actions specified by this AD are intended to ensure the integrity of the fail-safe features of the thrust reverser system by preventing possible failure modes in the thrust reverser control system that can result in inadvertent deployment of a thrust reverser during flight. This action is intended to address the identified unsafe condition.

DATES: Effective November 18, 2003.

The incorporation by reference of certain publications, as listed in the regulations, is approved by the Director of the Federal Register as of November 18, 2003.

The incorporation by reference of a certain publication, as listed in the regulations, was approved previously by the Director of the Federal Register as of September 5, 1995 (60 FR 39631, August 3, 1995).

ADDRESSES: The service information referenced in this AD may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. This information may be examined at the Federal Aviation Administration (FAA), Transport Airplane Directorate, Rules Docket, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Dan Kinney, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98055-4056; telephone (425) 917-6499; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 95-16-02, amendment 39-9321 (60 FR 39631, August 3, 1995), which is applicable to certain Boeing Model 747SP, 747SR, 747-100, -200, and -300 series airplanes, was published as a supplemental Notice of Proposed Rulemaking (NPRM) in the Federal Register on May 1, 2003 (68 FR 23235). The action proposed to continue to require repetitive operational tests of the reversible gearbox pneumatic drive unit (PDU) or the reversing air motor PDU to ensure that the unit can restrain the thrust reverser sleeve, and correction of any discrepancy found. The action also proposed the installation of a terminating modification, repetitive functional tests of that installation to detect discrepancies, and repair if necessary. Additionally, the action also proposed to remove airplanes from the applicability and to add certain new requirements.

Clarification of Applicability

The FAA has revised the applicability paragraph of this AD by specifying the applicable engine models for the Pratt & Whitney Model JT9D-7 series engines (i.e., -7, -7A, -7F, and -7J). We also point out that the Model JT9D-7Q series engines is a separate engine series and is not included in the Model JT9D-7 series engines. To clarify that point, we have added a new Note 1 to advise and clarify that this AD does not apply to Pratt & Whitney Model JT9D-70A engines, as those engines are not part of the Model JT9D-7 series engines. Subsequent notes in this AD have been renumbered accordingly.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. Due consideration has been given to the comments received.

Request for Clarification of the "New Relevant Service Information" Paragraph

One commenter states that the description of the new relevant service information fails to note that changing from three-step aisle stand clutch packs to two-step, as described in Boeing Service Bulletin (SB) 747-78-2152, Revision 4, may not be necessary. The commenter explains that Revisions 5 and 6 of that SB provide for continued use of the three-step clutch in some instances. Therefore, the commenter requests that clarification to allow such continued use of the three-step clutch be specified in the final rule.

The FAA acknowledges that the description in the "New Relevant Service Information" paragraph did not specify continued use of the three-step clutch and agrees that clarification is needed. We point out that the intent of the requirements in paragraph (c)(3) of the final rule is that the system pass all required tests. Although the two-step configuration is typically necessary for the microswitch pack conversion, we acknowledge that provision for use of the three-step clutch is

provided for in Revisions 5 and 6 of Boeing SB 747-78-2152. Since paragraph (c)(3) of the final rule specifies compliance with either Revision 5 or 6 (including the provision for use of the three-step clutch), it is unnecessary to revise the final rule for that reason.

Request To Revise Specified Revision of the Airplane Maintenance Manual (AMM)

One commenter advises that there is a later revision of the Boeing 747 AMM than that revision specified as the source of service information for the repetitive test instructions in paragraph (d) of the supplemental NPRM.

The FAA acknowledges that a later revision of the AMM has been issued and infers that the commenter is requesting that we revise the supplemental NPRM to specify the newer revision of the AMM. Revising the AD is unnecessary because, as long as the referenced section is unchanged in later versions of the AMM, those later versions may be used to comply with this AD. On the other hand, since the AMM is not a document that is approved by the FAA, it is possible that a specific revision level may be revised in such a way as to affect the accomplishment of the AD. Therefore, when a specific revision level is referenced in an AD, that specific revision has been "approved" for the purposes of the AD. Under the provisions of paragraph (g)(1) of the final rule, we may approve requests for using a later revision of the AMM that changes the referenced section if data are submitted to substantiate that such use would provide an acceptable level of safety. No change is necessary to this AD in that regard.

Request To Extend Compliance Time for Dispatch Limitations

One commenter notes that some airplanes could be modified before the effective date of the AD and could then revert to operating with unmodified thrust reversers installed, which would be contrary to the requirements of paragraph (c)(3) of the supplemental NPRM. Therefore, the commenter requests that, instead of the compliance time specified in paragraph (e) of the supplemental NPRM of "within 10 days after deactivation of the thrust reverser," the compliance time read, "within 90 days after the effective date of the AD." The commenter explains that such an extension of the compliance time would prevent possible non-compliance with the AD. Further, the commenter states that there is no more risk of the unmodified reverser deploying on a modified airplane than on an unmodified airplane.

The FAA does not agree that the compliance time for paragraph (e) of this AD should be revised. If an airplane has one or more unmodified thrust reverser(s) installed prior to the effective date of the AD, it has not yet complied with the requirements of paragraph (c)(3) of the AD. The compliance time for the modification required by paragraph (c)(3) of the AD is within 48 months after the effective date of the AD. The qualifying provisions of paragraph (e) of the AD specifically apply to airplanes "after incorporation of the modification required by paragraph (c)(3) of the AD." We consider the 48-month compliance time for the modification required by paragraph (c)(3) of the AD, plus the 10-day dispatch limitation of the Master Minimum Equipment List, to be adequate time to complete the requirements of paragraph (e) of the AD. It is unnecessary to revise the AD for that reason.

Conclusion

After careful review of the available data, including the comments noted above, the FAA has determined that air safety and the public interest require the adoption of the rule with the changes previously described. The FAA has determined that these changes will neither increase the economic burden on any operator nor increase the scope of the AD.

Changes to 14 CFR Part 39/Effect on the AD

On July 10, 2002, the FAA issued a new version of 14 CFR part 39 (67 FR 47997, July 22, 2002), which governs the FAA's airworthiness directives system. The regulation now includes material that relates to altered products, special flight permits, and alternative methods of compliance (AMOCs). However, for clarity and consistency in this final rule, we have retained the language of the supplemental NPRM regarding that material.

Change to Labor Rate Estimate

We have reviewed the figures we have used over the past several years to calculate AD costs to operators. To account for various inflationary costs in the airline industry, we find it necessary to increase the labor rate used in these calculations from \$60 per work hour to \$65 per work hour. The cost impact information, below, reflects this increase in the specified hourly labor rate.

Cost Impact

There are approximately 455 airplanes of the affected design in the worldwide fleet. The FAA estimates that 218 airplanes of U.S. registry will be affected by this AD.

The operational tests that are currently required by AD 95-16-02, and retained in this AD, take approximately 16 work hours (4 per engine) per airplane to accomplish, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of the currently required actions is estimated to be \$1,040 per airplane, per test cycle.

It will take approximately 544 work hours per airplane, to accomplish the wiring modifications, at an average labor rate of \$65 per work hour. Required parts will cost approximately \$21,600 per airplane. Based on these figures, the cost impact of the wiring modifications required by this AD on U.S. operators is estimated to be \$12,417,280, or \$56,960 per airplane.

It will take approximately 104 work hours (26 per engine) per airplane to accomplish the removal of the thrust reverser sequencing mechanism and installation of a solenoid-operated shutoff valve, at an average labor rate of \$65 per work hour. The cost of required parts is minimal. Based on these figures, the cost impact of the removal and installation required by this AD on U.S. operators is estimated to be \$1,473,680, or \$6,760 per airplane.

It will take approximately 568 work hours per airplane to accomplish the sync lock hardware installation, at an average labor rate of \$65 per work hour. Required parts will cost approximately \$166,000 per airplane. Based on these figures, the cost impact of the installation required by this AD on U.S. operators is estimated to be \$44,236,560, or \$202,920 per airplane.

It will take approximately 8 work hours (2 per engine) per airplane to accomplish the functional test, at an average labor rate of \$65 per work hour. Based on these figures, the cost impact of the functional test required by this AD on U.S. operators is estimated to be \$113,360, or \$520 per airplane, per test cycle.

The cost impact figures discussed above are based on assumptions that no operator has yet accomplished any of the requirements of this AD action, and that no operator would accomplish those actions in the future if this AD were not adopted. The cost impact figures discussed in AD rulemaking actions represent only the time necessary to perform the specific actions actually required by the AD. These figures typically do not include incidental costs, such as the time required to gain access and close up, planning time, or time necessitated by other administrative actions.

Regulatory Impact

The regulations adopted herein will not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, it is determined that this final rule does not have federalism implications under Executive Order 13132.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. Section 39.13 is amended by removing amendment 39-9321 (60 FR 39631, August 3, 1995), and by adding a new airworthiness directive (AD), amendment 39-13334, to read as follows:

AIRWORTHINESS DIRECTIVE



Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
**Federal Aviation
Administration**

We post ADs on the internet at "www.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2003-20-16 Boeing: Amendment 39-13334. Docket 99-NM-67-AD. Supersedes AD 95-16-02, amendment 39-9321.

Applicability: Model 747SP, 747SR, 747-100, 747-200, and 747-300 series airplanes; equipped with Pratt & Whitney Model JT9D-3, -7 (i.e., -7, -7A, -7F, and -7J), and -7Q series engines and Model JT9D-7R4G2 engines; certificated in any category.

Note 1: This AD does not apply to Boeing Model 747-200 series airplanes that are equipped with Pratt & Whitney JT9D-70A engines, as that engine is not part of the Model JT9D-7 series engines.

Note 2: This AD applies to each airplane identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For airplanes that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (g)(1) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To ensure the integrity of the fail-safe features of the thrust reverser system by preventing possible failure modes in the thrust reverser control system that can result in inadvertent deployment of a thrust reverser during flight, accomplish the following:

Restatement of Requirements of AD 95-16-02

Operational Test

(a) Within 90 days after September 5, 1995 (the effective date of AD 95-16-02, amendment 39-9321), perform an operational test of the reversible gearbox pneumatic drive unit (PDU) or the reversing air motor PDU to ensure that the unit can restrain the thrust reverser sleeve, in accordance with Boeing Alert Service Bulletin 747-78A2131, dated September 15, 1994. Repeat the test thereafter at intervals not to exceed 2,000 flight hours until accomplishment of paragraph (c) of this AD.

Note 3: Paragraph (a) of this AD merely restates the requirements of paragraph (a) of AD 95-16-02. The intent of including this paragraph is to ensure that the currently required repetitive tests continue to be done until the terminating modifications specified in paragraph (c) of this AD are installed.

Corrective Action

(b) If any of the tests required by paragraph (a) of this AD cannot be successfully performed, or if any discrepancy is found during those tests, accomplish either paragraph (b)(1) or (b)(2) of this AD.

(1) Prior to further flight, correct any discrepancy found, in accordance with Boeing Alert Service Bulletin 747-78A2131, dated September 15, 1994. Or

(2) The airplane may be operated in accordance with the provisions and limitations specified in an operator's FAA-approved Minimum Equipment List (MEL), provided that no more than one thrust reverser on the airplane is inoperative.

New Requirements of This AD

Modifications

(c) Within 48 months after the effective date of this AD, accomplish the requirements of paragraphs (c)(1), (c)(2), and (c)(3) of this AD. Accomplishment of the actions required by this paragraph constitutes terminating action for the repetitive tests required by paragraph (a) of this AD.

(1) Install provisional wiring for the additional locking system on the thrust reversers, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-78-2134, Revision 3, dated March 19, 1998.

(2) Remove the thrust reverser sequencing mechanism and install a solenoid-operated shutoff valve in accordance with Boeing Service Bulletin 747-78-2052, Revision 5, dated February 22, 1996.

(3) Install an additional locking system on each thrust reverser in accordance with the Accomplishment Instructions of Boeing Service Bulletin 747-78-2152, Revision 5, dated June 14, 2001; or Revision 6, dated October 24, 2002.

Repetitive Tests

(d) Within 3,000 flight hours after accomplishment of paragraph (c) of this AD: Perform a functional test to detect discrepancies of the additional locking system on each thrust reverser in accordance with the procedures described in the Boeing 747 Airplane Maintenance Manual (AMM), Section 78-34-11, dated October 25, 1997. Prior to further flight, correct any discrepancy detected and repeat the functional test of that repair in accordance with the procedures described in the AMM. Repeat the functional tests thereafter at intervals not to exceed 3,000 flight hours.

Dispatch Limitations

(e) If, after incorporation of the modification required by paragraph (c)(3) of this AD on any airplane, it becomes necessary to install a thrust reverser assembly that does not have the additional locking system installed, dispatch of the airplane is allowed in accordance with the provisions and limitations specified in the operator's FAA-approved Master Minimum Equipment List, provided that the thrust reverser assembly that does not have the additional locking system installed is deactivated in accordance with Item 78-1, Section 2, of Boeing Document D6-33391, "Boeing 747-100/-200/-300/SP Dispatch Deviations Procedures Guide," Revision 25, dated July 26, 2002. No more than one

thrust reverser on any airplane may be deactivated under the provisions of this paragraph. Within 10 days after deactivation of the thrust reverser, install a thrust reverser assembly that has the additional locking system installed and reactivate the thrust reverser.

(f) If, prior to incorporation of the modification required by paragraph (c)(3) of this AD on any airplane, it becomes necessary to install a thrust reverser assembly that has the additional locking system installed, dispatch of the airplane is allowed in accordance with the provisions and limitations specified in the operator's FAA-approved Master Minimum Equipment List, provided that the thrust reverser assembly that has the additional locking system installed is deactivated in accordance with Item 78-1, Section 2, of Boeing Document D6-33391, "Boeing 747-100/-200/-300/SP Dispatch Deviations Procedures Guide," Revision 25, dated July 26, 2002. No more than one thrust reverser on any airplane may be deactivated under the provisions of this paragraph. Within 10 days after deactivation of the thrust reverser, install a thrust reverser assembly that does not have the additional locking system installed and reactivate the thrust reverser.

Alternative Methods of Compliance

(g)(1) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Seattle ACO.

(2) Alternative methods of compliance, approved previously in accordance with paragraphs (a) and (b) of AD 95-16-02, amendment 39-9321, are approved as alternative methods of compliance with the corresponding paragraphs in this AD.

Note 4: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Seattle ACO.

Special Flight Permits

(h) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be accomplished.

Incorporation by Reference

(i) Unless otherwise specified in this AD, the actions shall be done in accordance with Boeing Service Bulletin 747-78-2134, Revision 3, dated March 19, 1998; Boeing Service Bulletin 747-78-2052, Revision 5, dated February 22, 1996; Boeing Service Bulletin 747-78-2152, Revision 5, dated June 14, 2001; Boeing Service Bulletin 747-78-2152, Revision 6, dated October 24, 2002; and Boeing Alert Service Bulletin 747-78A2131, dated September 15, 1994; as applicable.

(1) This incorporation by reference of Boeing Service Bulletin 747-78-2134, Revision 3, dated March 19, 1998; Boeing Service Bulletin 747-78-2052, Revision 5, dated February 22, 1996; Boeing Service Bulletin 747-78-2152, Revision 5, dated June 14, 2001; and Boeing Service Bulletin 747-78-2152, Revision 6, dated October 24, 2002; is approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(2) The incorporation by reference of Boeing Alert Service Bulletin 747-78A2131, dated September 15, 1994, was approved previously by the Director of the Federal Register as of September 5, 1995 (60 FR 39631, August 3, 1995).

(3) Copies may be obtained from Boeing Commercial Airplane Group, P.O. Box 3707, Seattle, Washington 98124-2207. Copies may be inspected at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

Effective Date

(j) This amendment becomes effective on November 18, 2003.

Issued in Renton, Washington, on October 3, 2003.

Ali Bahrami,

Acting Manager, Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 03-25700 Filed 10-10-03; 8:45 am]

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